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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

RONALD LOUIS QUAGLIA et al.

Group Art Unit: 3683

Examiner: Devon C. Kramer

Serial No.: 10/065,471

Filed: October 22, 2002

For: BRAKE ASSEMBLY WITH TUNED MASS DAMPER

Attorney Docket No.: 201-0782 GAS (FMC 1640 PUS)

REPLY BRIEF UNDER 37 C.F.R. § 41.41

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Sir:

This Reply Brief is in response to the Examiner's Answer mailed on March 22, 2005 for the above-identified patent application. For convenience, the Reply Brief is organized in accordance with subheadings found in the Argument section of the Appeal Brief.

The Examiner's Answer presents revised arguments, but does not contain any new ground of rejection.

CERTIFICATE OF MAILING UNDER 37 C.F.R. § 1.8

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A. Claims 1, 2, 8 and 9 Are Patentable Under 35 U.S.C. § 102(b) Over U.S. Patent No. 6,193,024

U.S. Patent No. 6,193,024 issued to Heppes et al. (hereinafter "Heppes '024") does not disclose all of the limitations recited in claims 1, 2, 8 and 9 as discussed below. Moreover, the Examiner has not established a *prima facie* case in either the final Office Action or the Examiner's Answer.

Claim 1 requires a "backplate having at least one hole formed therein and a tuned mass damper having a mass disposed within the hole for damping vibrations associated with the operation of the vehicle disk brake." Similarly, claim 8 requires "a tuned mass damper having a mass disposed within the hole in the backplate ... for damping vibrations associated with the operation of the brake assembly." Heppes '024 does not disclose a backplate that has a tuned mass damper having a mass that dampens vibrations. In the final Office Action, the Examiner cited Figure 15A (reproduced below) and stated that radial material strip 18 was the mass of a tuned mass damper (see final Office Action, page 2 and Examiner's Answer, page 3).

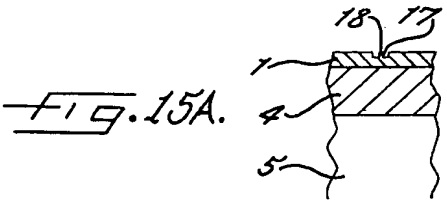


FIG. 15A.

In the Examiner's Answer, the Examiner hypothesizes that "the material strip is added to the damping plate and is able to assist in the damping of vibrations" (see Examiner's Answer, page 3). Heppes '024 does not disclose or even remotely suggest that the radial material strip 18 dampens vibrations. On the contrary, Heppes '024 discloses that the sole purpose of the radial material strip is to distribute [pressure] across the entire pressure

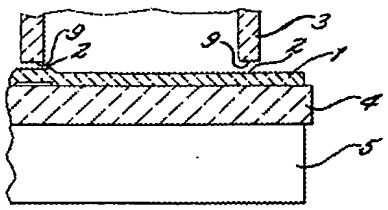
surface" (column 5, lines 24-25). Therefore, there is no support in Heppes '024 for the Examiner's hypothesis.

In the Examiner's Answer, the Examiner also contends that "mass member (18) acts as a mass damper" and that "the functionality of the mass of Heppes in [sic] inherent to the design of the device" (see Examiner's Answer, page 4). The Examiner assumes that any mass disposed in a hole dampens vibrations. Such an assumption is illogical. As discussed in more detail in the Appeal Brief, the radial material strip 18 does not move during brake operation since the end of the radial material strip 18 is forced against the pressure applying unit 3 (see column 5, lines 19-25 of Heppes '024). Thus, the radial material strip 18 cannot possibly provide any dampening effect or act as a tuned mass damper. Moreover, since the radial material strip is held in position, it permits pressure and vibration to be transmitted from the pressure applying unit 3 to the brake lining 5. Thus, the radial material strip 18 in Heppes '024 cannot properly be interpreted as a tuned mass damper and this rejection must be reversed.

The Examiner's attempt to point to the title and abstract for support is without merit (see Examiner's Answer, page 4). More specifically, the title and abstract merely recite the words "damping plate" and do not disclose or inherently describe a tuned mass damper, let alone a tuned mass damper disposed within a hole for damping vibrations as required by the present invention.

Claim 8 also requires a "a tuned mass damper having a mass disposed within the hole in the backplate and attached to the backplate for damping vibrations associated with the operation of the brake assembly." As discussed in more detail in the Appeal Brief, Heppes '024 does not disclose a backplate that is attached to a brake pad. Rather, the damping plate 1 is separated from the brake lining 5 by the base plate 4 and is not attached to the brake lining (see Figure 2A reproduced below).

FIG. 2A.



In the Examiner's Answer, the Examiner argues that "one could consider the base plate and the damping plate to be the backing plate (1,4) which would then be attached and in direct contact with the pad." The Examiner is mistaken. Claim 1 requires a "backplate having at least one hole formed therein." Base plate 4 does not have any hole and therefore cannot be properly interpreted as being a backplate. In addition, damping plate 1 and base plate 4 are clearly separate and independent components and cannot properly be interpreted as being a single baseplate as required by claims 1 and 8. The Federal Circuit requires that, "the identical invention must be shown in as complete detail as is contained in the ... claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236 , 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). Two distinct and independent components, namely a damping plate 1 and a base plate 4, is not identical to the single backplate of the present invention. Consequently, the Examiner has not established a *prima facie* case and the rejection of claim 8 must be reversed.

Claims 2 and 9 depend on claims 1 and 8, respectfully. Therefore, Applicants believe the rejection of these claims must be reversed for the reasons previously discussed.

B. Claims 1 and 8 Are Patentable Under 35 U.S.C. § 102(b) Over U.S. Patent No. 3,198,294

U.S. Patent No. 3,198,294 issued to Stacy (hereinafter "Stacy '294") does not disclose all of the limitations recited in claims 1 and 8 as discussed below. Moreover, the Examiner has not established a *prima facie* case in either the final Office Action or the Examiner's Answer.

Claim 1 requires a "backplate having at least one hole formed therein and a tuned mass damper having a mass disposed within the hole for damping vibrations associated with the operation of the vehicle disk brake." Similarly, claim 8 requires a "backplate having a hole formed therein" and "a tuned mass damper having a mass disposed within the hole in the backplate and attached to the backplate for damping vibrations associated with the operation of the brake assembly." Stacy '294 does not disclose a tuned mass damper disposed in a backplate hole for damping vibrations as required by claims 1 and 8. In the final Office Action and the Examiner's Answer, the Examiner stated that reference number 42 was the mass of a tuned mass damper (see final Office Action, page 3 and Examiner's Answer, page 4). Reference number 42 refers to "a slotted head 42" of a fastener (see column 4, lines 41-42 and Figure 7 reproduced below). The function of the slotted head 42 is "to be rotated by a screwdriver," not to dampen vibrations (see column 4, line 42). Indeed, Stacy '294 does not disclose or even remotely suggest that the slotted head 42 dampens vibrations as required by claim 1 and 8.

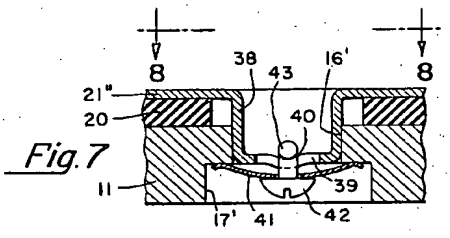


Fig. 7

Similarly, the body to which the slotted head 42 is attached cannot properly be interpreted as a tuned mass damper. Stacy '294 discloses that "plate 21'' is secured by a plurarality [sic] of fasteners each of which comprises a Belleville spring 41" (see column 4, lines 38-39). The biasing force of the Belleville spring 41 forces plate 21'' against a rubberlike pad 20'' such that plate 21'' "is free to more inwardly and outwardly due to the resilient suspension thereof between the pad and springs 41" (see column 4, lines 46-48). As such, the fasteners disclosed in Stacy '294 enable movement of plate 21'' rather than dampen vibrations as required by claims 1 and 8. Similarly, the fasteners do not dampen vibrations of the backing plate 11 or brake lining. More specifically, Stacy '294 discloses that backing plate 11 "provides the necessary tilting action for equalizing braking pressures and to allow the brake lining to vibrate" (column 2, lines 14-17). As such, Stacy '294 teaches away from the present invention since the backing plate allows vibration rather than dampening it. For these reasons, Applicants believe that a *prima facie* case has not been established and that this rejection must be reversed.

Even if the slotted head 42 could properly be considered a tuned mass damper, it is not attached to a backplate as required by claim 8. Instead, the slotted head 42 is attached to a fastener having a "T-shaped portion 43" (see column 4, line 43 and Figure 7). The T-shaped portion 43 is "adapted to be inserted through slot 39" of stud 38 and "turned 90 deg. so as to seat in groove 40" of stud 38 (see column 4, lines 43-44). As such, Stacy '294 does not disclose or remotely suggest that slotted head 42 is attached to backplate 11. Moreover, neither the Belleville spring 41 nor the T-shaped portion 43 (which the Examiner does not assert is a tuned mass damper) is attached to the backing plate 11. Indeed, the Belleville spring 41 merely contacts a surface of the backing plate 11 -- there is absolutely no disclosure of attachment. Moreover, the T-shaped portion 43 cannot possibly be attached to the backing plate 11 since it does not contact the backing plate and is rotatably disposed in another component, namely slot 39 of plate 21''. Thus, a *prima facie* case has not been established and this rejection must be reversed.

CONCLUSION

The cited references do not disclose all the limitations recited in claims 1, 2, 6, 8, 9 and 13. Therefore, the final rejection of these claims should be reversed.

Respectfully submitted,

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